



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

June 8, 2001

OFFICE OF
WATER

MEMORANDUM

To: Donald Barnes, Director
Office of the Science Advisory Board (SAB)

From: Diane Regas /S/
Acting Assistant Administrator (OW)

Subject: Request for Review of the Benefits Assessment for the Arsenic in Drinking Water Regulation

With this memo, EPA is requesting the Science Advisory Board (SAB) to perform a review of the benefits analysis prepared by EPA in support of the arsenic drinking water standard. The Agency requests the SAB to review the benefits assessment component of the regulatory support document entitled *Arsenic in Drinking Water Rule Economic Analysis* (EPA 815-R-00-26, 2001). The document provides a detailed assessment of the quantified and unquantified costs and benefits of the arsenic rule, as required by the Safe Drinking Water Act (SDWA). EPA would like a report of findings and recommendations that answer the five questions posed in the attached Scope of Review. Also attached are other pertinent documents that will be of interest to the SAB in conducting the review: (1) the preamble to the January 22, 2001 arsenic rule (66 *Federal Register* 6976); (2) *EPA Guidelines for Preparing Economic Analyses* (EPA-240-R-00-003, September 2000); (3) the *Report of the Benefits Working Group of the National Drinking Water Advisory Council* (unpublished, October 1998); and (4) SAB's July 2000 Report on EPA's White Paper, *Valuing the Benefits of Fatal Cancer Risk Reduction*.

In order to ensure that SAB's recommendations are fully considered in decision-making, it is important that the review be made available to the Administrator by August 2001 to coincide with the findings and recommendations from independent reviews of the health effects by the National Academy of Sciences and costs by the National Drinking Water Advisory Council.

Background

Studies have linked long-term exposure to arsenic in drinking water to cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate. Non-cancer effects of

ingesting arsenic include cardiovascular, pulmonary, immunological, neurological, and endocrine (e.g., diabetes). The current standard of 50 ppb was set by EPA in 1975, based on a Public Health Service standard originally established in 1942. A March 1999 report by the National Academy of Sciences concluded that the current standard does not achieve EPA's goal of protecting public health and should be lowered as soon as possible.

The SDWA requires EPA to revise the existing 50 parts per billion (ppb) arsenic standard. In response to this mandate, the Agency published a standard of 10 ppb to protect consumers against the effects of long-term, chronic exposure to arsenic in drinking water on January 22, 2001. The rule is significant in that it is the second drinking water regulation for which EPA has used the discretionary authority under §1412(b)(6) of the SDWA to set the Maximum Contaminant Level (MCL) higher than the technically feasible level, which is 3 ppb for arsenic -- based on a determination that the costs would not justify the benefits at this level. The January 22, 2001 arsenic rule is based on the conclusion that a 10 ppb MCL maximizes health risk reduction at a cost justified by the benefits.

Key stakeholder concerns on the benefits component of the economic analysis include the following issues: (1) the timing of health benefits accrual (latency); (2) the use of the Value of Statistical Life as a measure of health benefits; (3) the use of alternative methodologies for benefits estimation; (4) how the Agency considered non-quantifiable benefits in its regulatory decision-making process; (5) the analysis of incremental costs and benefits; and (6) the Agency's assumption that health risk reduction benefits will begin to accrue at the same time costs begin to accrue.

The January 22, 2001 rule will apply to all 54,000 community water systems and requires compliance by 2006. A community water system is a system that serves 15 locations or 25 residents year-round, and includes most cities and towns, apartments, and mobile home parks with their own water supplies. EPA estimates that roughly five percent, or 3000, of community water systems, serving 11 million people, will have to take corrective action to lower the current levels of arsenic in their drinking water. The new standard will also apply to 20,000 "non-community" water systems that serve at least 25 of the same people more than six months of the year, such as schools, churches, nursing homes, and factories. EPA estimates that five percent, or 1,100, of these water systems, serving approximately 2 million people, will need to take measures to comply with the January 22, 2001 rule. Of all of the affected systems, 97 percent are small systems that serve fewer than 10,000 people each.

Attachments

cc: Tom Gibson, OPEI
Al McGartland, OPEI
Cynthia Dougherty, OGWDW
Ephraim King, OGWDW

June 2001

ARSENIC BENEFITS PANEL: SCOPE OF REVIEW

The panel will review quantified and unquantified arsenic benefits analysis as required by SDWA, and evaluate whether the components, methodology, criteria and estimates reflected in EPA's benefits analysis are reasonable and appropriate in light of the Science Advisory Board's (SAB) benefits transfer report, EPA's Guidelines for Preparing Economic Analyses (September 2000) developed in consultation with SAB, relevant requirements of SDWA, National Drinking Water Advisory Council recommendations to EPA on benefits, and recent literature. As part of a general review, consideration should be given to the following issues:

- a) How should total benefits and costs and incremental benefits and costs be addressed in analyzing regulatory alternatives to ensure appropriate consideration by decision makers and the public?
- b) How should latency be addressed in the benefits estimates when existing literature does not provide specific quantitative estimates of latency periods associated with exposure to arsenic in drinking water?
- c) Should reduction/elimination of exposure be evaluated as a separate benefits category, in addition to or in conjunction with mortality and morbidity reduction?
- d) How should health endpoints (other than bladder and lung cancer) be addressed in the analysis, when [existing] literature does not provide specific quantification, to ensure appropriate consideration by decision makers and the public?
- e) How should uncertainties be addressed in the analysis to ensure appropriate consideration by decision makers and the public?